We Claim:

1. A controllable piston valve for a shock absorber having a piston cylinder structure, the piston valve comprising the following features:

- a piston valve member (22, 22a) which controls a throughflow area is actuated by a control piston (32) defined as differential piston which includes oppositely directed effective surfaces subject to the pressure of a piston and an annular chamber (14, 12) respectively of the piston cylinder structure,
- the control piston (32) and/or the valve member is additionally loaded with the pressure P_a of a pressure source opposite to the larger (34) of the effective surfaces, the pressure source being formed of a combination of a fluidic resistance R_{ha} and a fluidic capacitance (44) and is supplied by the pressure in the piston or annular chamber (14, 12) respectively of the piston cylinder structure.

2. A controllable piston valve for a shock absorber having a piston cylinder structure, the piston valve comprising the following features:

- two piston valve members (84, 86) each controlling a throughflow area and each being actuable by two control piston portions,
- effective surfaces of the control piston portions of the first piston valve member are connected to the piston and the annular chamber of the piston cylinder structure and
- effective surfaces of the control piston portions of the second piston valve member are connected with the piston chamber or a pressure source, the pressure source being formed by the combination of a fluidic resistance R_{ha} and a fluidic capacitance which is supplied by the pressure of the piston or the annular chamber (14, 12) respectively of the piston cylinder structure.

3. The piston valve of claim 1, wherein a second piston valve member is located parallel to the first piston valve member which is also actuated by a control piston being a differential piston the opposite effective surfaces thereof being subject to the pressure of the piston chamber and the annular chamber of the piston cylinder structure.

4. The piston valve of claim 1, wherein it is formed as two-way-valve having an integral piston valve spool (22) with two control surfaces or edges (28, 30) respectively, the valve spool (22) being actuated by the control piston (32) and the pressure P_a of the balancing pressure source.

5. A controllable bottom valve for a shock absorber having a piston cylinder structure or a plunger cylinder structure with a storage volume, respectively, the bottom valve having the following features:

- a bottom valve member (60, 60a) which controls a throughflow area and is actuated by a control piston defined by a differential piston,
- the control piston has a first effective surface (72, 72a) which is subject to the pressure in the piston or plunger chamber (54) of the piston or plunger cylinder structure,
- the differential piston has a second effective surface (74, 74a) which is subject to the pressure of the storage volume (56), the effective surfaces being oppositely directed,
- the pressure Pa of the pressure source acts on the bottom valve (60, 60a) or the control piston, respectively opposite to the effective surfaces, the pressure source including a combination of a fluidic resistance R_{ha} and a fluidic capacitance (80) and being supplied by the pressure of the piston chamber or the plunger chamber, respectively, or the pressure of the storage volume (56).

6. The bottom valve of claim 5, wherein a second bottom valve member is arranged parallel to the first bottom valve member (60a), the second valve member is actuated by a differential piston having effective surfaces facing in the same direction and being subject to the pressure of the piston or plunger chamber, respectively, and the storage volume.

7. The bottom valve of claim 5, wherein it is formed as two-way-valve

having an integral valve spool (60) with two control surfaces or edges, respectively (62, 64), the valve spool (60) being actuated by the control piston or the pressure source.

8. The valve of claims 1 to 7, wherein the effective area of the fluidic resistance is variable.

9. The valve of claim 8, wherein the flow area is changed in dependence of the compression or pulling performance of the shock absorber.

10. The valve of claim 8, wherein the flow area is changed in dependence of the steering angle and/or the actuation of a brake pedal of a vehicle.

11. The bottom valve of claims 1 to 10, wherein the fluidic resistance includes a solenoid valve (94, 92).

12. The valve of claim 11, wherein the solenoid valve (92, 94) is connected in parallel to an orifice R_{ha} of constant area.

13. A valve of claim 5, characterized by its application to a two-tube shock absorber.

14. The valve of claim 1 or 5, wherein the piston valve spool is displaceably supported in an absorber piston (110) and held in a neutral position by a spring arrangement (150), and a passage (136) through a valve spool (118) with a restriction (138) forms the fluidic resistance which is in communication with a storage volume (148) in piston rod (112).

15. Controllable piston valve of one of the claims 1 to 14, wherein control piston and piston valve (22b) are formed at an integrally formed piston arrangement which is located in a bore of same diameter, a piston portion controlling a first throughflow area has a first effective surface (34), an oppositely

directed second effective surface is formed at a piston portion (33b) which is loaded with pressure P_a of the pressure source (44), a valve chamber (31b) formed through an outer constriction of the valve spool is connected to the annular chamber (14) of the piston cylinder structure and is in communication with an inner bore (202) through at least one radial bore (200) in the piston arrangement, and a piston portion (204) extends into the inner bore which is fixedly attached to the bore and subject to the pressure of the pressure source (44).